

## NOTES, REVIEWS, ETC.

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### A METHOD FOR MAKING ABSOLUTE ALCOHOL

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The necessity of absolute alcohol to the histologist makes it one of the important considerations in a small laboratory. Since it is expensive to purchase it as such, and since an incorporated institution of learning is able to obtain commercial alcohol without the payment of the large internal revenue tax, most of us have manufactured more or less absolute alcohol for use in the laboratory.

The use of unslaked lime to remove water is satisfactory as far as the resulting absolute alcohol is concerned, but is a "messy" process which occupies a great deal of room while going on and involves distilling apparatus not always to be found in a small place. It should also be done by an experienced person, and so the instructor himself must take a couple of days from his other work to go through the process.

The result in our laboratory was that we bought absolute alcohol very often rather than prepare it.

At the suggestion of the head of the chemical department, calcium carbide was used to dehydrate the commercial alcohol and the process is so simple that I give it in detail.

The calcium carbide used is the finely granular sort prepared for portable lamps.

Into a round-bottomed glass flask holding 1500cc., put an excess of carbide—300 to 350 grams—and 1000cc. commercial alcohol (94 per cent). This, with a good sized condenser set vertically in the stopper, should be placed in a chemical hood or by an open window and allowed to react. After the action slows down, in an hour or thereabouts, heat is gently applied, preferably with a water-bath, and the boiling continued for two hours longer. Allow to cool sufficiently to handle, remove the condenser, and connect it to the flask in the regular distilling position by a Hopkins (Kjeldahl) distillation bulb. The other end of the condenser can be connected to a receiving vessel by an adapter and this vessel should have a CaCl drying tube in its cork. See that all the joints are tight and distil over rapidly. If the distillation is stopped just before the flask is boiled dry the flask will not break.

The excess of carbide, when water is added after cooling, will loosen the solid mass in the bottom of the flask so that the flask can be easily cleaned.

800cc. out of a liter has been recovered as absolute alcohol. This will mix with the usual xylol without milkiness. It has a rather offensive odor of acetylene, but is far cheaper than the absolute alcohol from supply houses and quicker than making absolute from lime.

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#### A CONVENIENT REAGENT CASE

A sectional bookcase has been found most useful for keeping the reagents and appliances used in microscopy free from dust. The case stands at the side of my work table in a corner. The third (13 in.) section from the floor, at the level of the table, is the one which holds the dehydration series and staining jars. In the sections above and below this are slide boxes, metric apparatus, drawing materials and a dissecting microscope.

The short distance needed by the doors for swinging allows me to sit at the work table and reach into most of the sections.

There is also less danger of upsetting jars when they are not on the table in front of you.

The reagent shelf of the bookcase should have all varnish removed as alcohol running down the sides of the bottles softens the varnish and causes the bottles to stick. S. R. WILLIAMS.

#### CULTURES OF SAPROLEGNIA

A very satisfactory method of cultivating and handling the various species of *Saprolegnia*, *Achlya*, and other of the water-molds, particularly suitable for allowing individual study in large classes, is as follows:

1. Secure bottom-ooze from a number of ponds or lakes, etc., if no infested materials are at hand. Place in these cultures a few flies, that have been immersed in alcohol for disinfection and then thoroly rinsed in water.

2. When any of these begin to show signs of the saprophytes, as a whitish halo, remove the flies to watch glasses half full of water for observation, one fly to each vessel.